

# PATENT SPECIFICATION

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## COMPLETE SPECIFICATION

### Improvements in Brushes

We, UNIVERSAL METAL PRODUCTS LIMITED, a British Company, of Langley Road, Pendleton, Salford 6, Lancashire, and MAURICE BIDDULPH, a British Subject, of the Company's address, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention has for its object to provide an improved and economically produced tooth brush with bristles of synthetic plastic materials.

Articles such as brushes and brooms have been proposed comprising "bristles" of indiarubber formed integral with an indiarubber base by partial squirting of a rubber mass through a perforated element which remains permanently in the finished article of which it forms a component part, acting as a support for the base and also as a mounting or frame.

In accordance with the present invention, a tooth brush comprises bristles made integral and simultaneously with a base member by injection moulding from a synthetic plastic material such as nylon or polythene, said base member forming part of or being attached by a plug and socket connection to, a handle.

The invention further comprises such a tooth brush having one or more sets of bristles, the bristles in the or each set being arranged in concentric rings around a central aperture in the base member, such aperture facilitating the cleaning of the bristles by washing or rinsing.

The handle may be moulded with at least one tapered plug projecting from it near the end. Each brush portion may consist of a circular base member with a central tapered opening at one side into which the plug on the handle can be pressed, and bristles projecting from the other side.

Alternatively, the plug may be moulded on the brush base member, the handle being

formed with a socket or sockets.

The handle may have one plug or socket, or it may have two or more placed side by side, which may each carry a circular brush portion so that the complete brush is of elongated form. Alternatively an elongated brush portion could be secured to the handle by one or more plugs.

With this arrangement, when the bristles of the tooth brush become worn, the brush portion may be detached from the handle and replaced by a new one.

A tooth paste tube may be provided with a closure cap moulded with a recess in which a brush portion as described above is accommodated. In this way the user may be provided with a replacement brush portion with each tube of tooth paste.

Referring to the accompanying explanatory drawing:—

Figure 1 shows a tooth brush according to the invention, partly in section;

Figure 2 shows another form of tooth brush in elevation;

Figure 3 shows a third form of tooth brush, partly in section.

Figure 4 is an enlarged plan view of a mould for use in making tooth brushes according to the invention.

In the construction shown in Figure 1, the tooth brush comprises a handle *a*, with two holes *b*, around each of which are moulded integrally with the handle a number of concentric rings of bristles *c*, each of which is of substantially semicircular cross section. The holes *b* facilitate the cleaning of the bristles by washing or rinsing.

In Figure 2, the bristles *c* are moulded integrally with a circular back or base member *d* having a central hole in which fits a plug *e* formed on the handle.

In Figure 3, a plug *f* is moulded on the brush base member *d* and fits into a hole in the handle.

The brush elements are made from any suitable plastic material, such as nylon or polythene, by means of a mould, one part

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of which is shown in Figure 4. This comprises a central plug *g* and a number of concentric rings *h*, the plugs and rings having grooves machined in their outer surfaces, which when the mould is assembled form channels in which the bristles are moulded. The grooves may be of any convenient cross-section so as to obtain bristles of a desired shape. The other part of the mould is suitably shaped to mould a handle as in Figure 1 or a base member *d* as in either Figure 2 or Figure 3.

It will be understood that the diameter of each brush element is about equal to the width of an ordinary tooth brush and there may be for example five concentric rings of bristles, as illustrated.

What we claim is:—

1. A tooth brush, comprising bristles made

integral and simultaneously with a base member by injection moulding from a synthetic plastic material such as nylon or polythene, said base member forming part of or being attached by a plug and socket connection to, a handle.

2. A tooth brush as claimed in claim 1, having one or more sets of bristles, the bristles in the or each set being arranged in concentric rings around a central aperture in the base member, such aperture facilitating the cleaning of the bristles by washing or rinsing.

3. A tooth brush substantially as described and as shown in Figure 1, Figure 2 or Figure 3 of the accompanying drawing.

Dated this 30th day of March, 1950.

MARKS & CLERK.

#### PROVISIONAL SPECIFICATION.

No. 10060 A.D. 1949

#### Improvements in Brushes

We, UNIVERSAL METAL PRODUCTS LIMITED, a British Company, of Langley Road, Pendleton, Salford 6, Lancashire, and MAURICE BIDDULPH, a British Subject, of the Company's address, do hereby declare the nature of this invention to be as follows:—

This invention has for its object to provide an improved and economical method of producing tooth brushes with bristles of synthetic plastic materials.

In accordance with our invention, the brush base or back and the bristles are produced integrally and simultaneously by a moulding operation from synthetic plastic materials, such as nylon or polythene.

The bristles may be formed in the peripheral slots in a plug like member mounted in an encircling socket, the centre of the socket producing a gap in the brush base or back which facilitates the cleaning of the bristles by washing or rinsing. Or the bristles may be produced in the slots in the edges of plates which are brought together to make the slots into holes.

If desired the bristles and back or base may be secured to a handle part of any desired material to suit requirements.

Dated this 6th day of April, 1949.

MARKS & CLERK.

#### PROVISIONAL SPECIFICATION.

No. 17549 A.D. 1949

#### Improvements in Brushes

We, UNIVERSAL METAL PRODUCTS LIMITED, a British Company, of Langley Road, Pendleton, Salford 6, Lancashire, and MAURICE BIDDULPH, a British Subject, of the Company's address, do hereby declare the nature of this invention to be as follows:—

This invention relates to tooth brushes and has for its object to provide an improved tooth brush of inexpensive construction.

A tooth brush according to the invention comprises a handle, preferably of plastic material, and at least one detachable and interchangeable brush portion consisting of a plate of plastic material with tufts of bristles inserted therein or moulded integrally therewith.

The handle may be moulded with at least one tapered plug projecting from it near the end. Each brush portion may consist of a

circular disc with a central tapered opening at one side into which the plug on the handle can be pressed, and tufts or bristles projecting from the other side.

The handle may have one plug, or it may have two or more placed side by side, which may each carry a circular portion so that the complete brush is of elongated form. Alternatively an elongated brush portion could be secured to the handle by one or more plugs.

With this arrangement, when the tufts of the tooth brush become worn, the brush portion may be detached from the handle and replaced by a new one.

According to a further feature of the invention, a tooth paste tube is provided with a closure cap moulded with a recess in which a brush portion as described above is accom-

modated. In this way the user may be provided with a replacement brush portion with each tube of tooth paste.

Dated this 29th day of June, 1949.

MARKS & CLERK.

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